

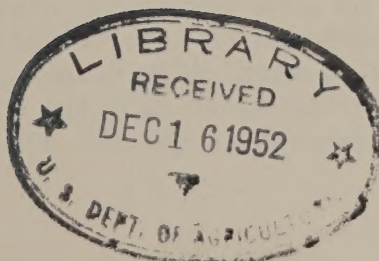
3
COLORADO 18 GUNNISON

FIELD APPRAISAL ANALYSIS

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2 U.S. RURAL ELECTRIFICATION ADMINISTRATION

Field Appraisal
Completed in
August 1952

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SUMMARY AND CONCLUSION

AREA CHARACTERISTICS

The system area is in west central Colorado with headquarters at Crested Butte. Almost all the consumers are located in Gunnison County. Ninety-four percent of the farm income is from the sale of livestock and livestock products. It is primarily a beef-producing area. The average gross income per farm in 1949 was over \$13,000 as compared to the United States average of \$4,026. The average size farm in 1949 was 1,324 acres, an increase of 403 acres per farm since 1944. Population decreased 8 percent during the past decade in the county. Coal mining and lumbering furnish employment for nonfarm and town residential consumers. Seventy-seven percent of the farms reported having electricity, and 78 percent reported having telephones in 1950.

ULTIMATE NUMBER OF CONSUMERS

On June 30, 1952, this system was serving 618 consumers. The manager estimates 50 potential farm consumers exist in the service area. There is some question as to the ultimate number of nonfarm and residential consumers. One large coal mine is closing down. Another mine might increase its capacity to offset the loss of the 150 workers; however, this was not certain at the time of the appraisal. Inquiries have been made to furnish power for the increased needs of the mine expansion by the cooperative. Some additional potential consumers of a seasonal nature are likely, such as new resorts and cottages along the Gunnison River which may be occupied during the hunting and fishing seasons. However, no ultimate number of these types of consumers could be predicted at the time of the appraisal.

ESTIMATED FUTURE CONSUMPTION OF ELECTRICITY

Consumers have not been using electrical energy at the same rate as the average for the United States as determined by REA standards for electrical appliances and equipment. The actual average consumption, taken from the billing records, is 73 percent of the indicated present consumption for farm consumers, and 66 percent for nonfarm and town residential consumers. The town of Gunnison has been the source of supply of electricity for the cooperative. During peak periods the electrical supply has not been adequate to meet the demand and has resulted in the cooperative's total needs not being met. This is being corrected by the Bureau of Reclamation extending lines into the served area to furnish power for the cooperative. It is assumed that as soon as an adequate supply of power is available the consumers gradually will increase their consumption of kwh per appliance or equipment and that usage in the area will move toward the average usage for the country as determined by REA.

2-Summary -- Colorado 18 Gunnison -- October 21, 1952

LP gas is being used by 14 percent of the consumers at the present time. No increase in the use of LP gas was indicated. Gas is being used primarily for cooking and heating water in the large ranch homes.

The increased kwh consumption during the next 3 years for consumers will be principally from water heating, refrigeration and cooking by farm consumers.

Based on all factors believed to be significant, this leads to the following average monthly estimates, which are certified as being reasonable and may be expected to be attained by the years specified:

<u>Class of Consumer</u>	<u>Calendar Year 1951</u>	<u>1954</u>	<u>1957</u>	<u>1962</u>
Farm	198	250	320	420
Nonfarm residential	72	95	120	165
Town residential	58	75	100	140

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October 13, 1952

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ANALYSIS OF BASIC FACTORS RELATED TO THE
RURAL ELECTRIFICATION LOAN FOR
COLORADO 18 GUNNISON

This analysis of the present and probable future consumption of electricity for the Gunnison County Electric Association, Inc., with headquarters in Crested Butte, is based on a field study for Gunnison County and parts of Montrose, Delta, Ouray, San Juan, Pitkin and Saguache Counties, Colorado. The field appraisal was conducted by Vergil Bufford, Agricultural Economist, and was completed in August 1952, consisting primarily of visits to 31 served and 11 potential farm consumers, 31 nonfarm and 31 town residential consumers.^{1/} The analysis was completed by Earl A. Gardner, Agricultural Economist. A map of the ultimate boundary of the service area is shown in Figure 1.

ULTIMATE NUMBER OF CONSUMERS

As of June 30, 1952, this system was serving 618 consumers. The manager estimates that an additional 50 potential farm consumers exist in the service area (Figure 2). The field appraiser found, however, that the cooperative might possibly lose about 150 town residential and nonfarm consumers because of the closing of a coal mine in the area. On the other hand, there is the possibility of the Keystone Mines expanding its operations which would increase its number of employees to about equal the number being made idle by the closing of the other mine. The Keystone Mine has made inquiries regarding the cooperative's furnishing power for its expanding operations. The appraiser states that there is a possibility of additional seasonal consumers. New resorts and cottages along the Gunnison River are being constructed for vacation use. The owner of the electric system serving the town of Lake City has proposed to sell his plant to the cooperative, but no known action has taken place (see Figure 3). Of the 11 potential farm consumers drawn in the sample, 2 were not interested. Apparently these 2 were of the 22 unsigned prospective consumers.

^{1/} Respondents in the survey were randomly selected from tabular lists and comprise an approximate 20 percent sample of farm consumers, 36 percent sample of the nonfarm consumers, 16 percent sample of the town residential and a 22 percent sample of potential farm consumers.

Colorado 1st Gunnison - October 21, 1952

SUMMARY OF ESTIMATED KWH CONSUMPTION

The farm consumers interviewed indicated the greatest increase in expected future kwh consumption. According to the appraiser, the nonfarm and town residential consumers have frequent lay-offs in the mine and mills throughout the year, which lower their annual income considerably. Because of the recurrent turnover of the nonfarm and town residential consumers, it is not likely that these consumers will increase their kwh usage at a rate greater than is shown in Table I.

TABLE I

SUMMARY OF ESTIMATED KWH CONSUMPTION^{1/}

Class of Consumer	Estimated Monthly Consumption To Be Attained Within 3 Years		Total
	Equipment On Hand	Equipment To Be Added	
1. <u>Farm Consumers</u>			
a. Served	182	71	253
b. Potential	---	311	311
2. <u>Nonfarm Residential Consumers</u>			
a. Served	71	24	95
3. <u>Town Residential Consumers</u>			
a. Served	65	10	75
4. <u>Weighted Average</u> ^{2/}			
a. All Served Consumers	108	35	143

^{1/} Based on respondents interviewed. The farm consumers actually were using only 73 percent, and the nonfarm and town residential consumers only 66 percent, of the indicated average kwh usage as determined by REA for appliances and equipment throughout the United States. The actual usage is reflected in the above table for all served and potential consumers.

^{2/} The monthly operating reports did not indicate a seasonal consumer classification; therefore, it is assumed they are among the nonfarm and town residential consumers and are in addition to the data furnished in this table. No seasonal consumers were contacted in the survey.

SATURATION OF APPLIANCES AND EQUIPMENT

Table II reveals in detail the present and indicated future saturation of appliances and equipment for farm consumers interviewed in the survey, as indicated by them at the time of the appraisal. Table III shows the same data for the nonfarm and town residential consumers interviewed.

TABLE II

PERCENT OF SERVED FARM CONSUMERS USING AND PLANNING TO USE
ELECTRICAL APPLIANCES AND EQUIPMENT AND INDICATED ANNUAL
KWH USAGE PER 100 FARM CONSUMERS WITHIN THREE YEARS
AFTER THE DATE OF THE FIELD APPRAISAL

Appliance or Equipment	Percent of Consumers			Annual Kwh Usage Per Unit	Indicated Annual Kwh Usage		
	Using:	Planning:	Using and:		Per 100 Farm Consumers		
	: To Use	: Planning	: Usage		Present	Future	Total
	: (1)	: (2)	: (3)		Use (5)	Use (6)	Indicated Future Use (7)

MAJOR USES:

House Lighting	100	---	100	300	38,700	---	38,700
General Barn Lighting	74	3	77	24	1,934	77	2,011
Poultry Laying House Lighting	10	---	10	35	452	---	452
Yard Lighting	77	3	80	18	2,264	58	2,322
Iron	97	3	100	100	12,900	320	13,220
Ironer	13	3	16	120	1,548	384	1,932
Radio	94	6	100	100	16,130	640	16,770
Refrigerator	90	3	93	360	42,948	1,152	44,100
Range	19	10	29	1,200	27,120	11,640	38,760
Washing Machine	87	10	97	35	3,836	340	4,176
Pres. System-Lift 22' or Less	13	3	16	180	2,322	576	2,898
Pres. System-Lift Over 22'	71	3	74	240	18,576	768	19,344
Space Heater (Supplementary)	10	---	10	70	903	---	903
Freezer (Cabinet)	61	19	80	900	58,050	17,460	75,510
Water Heater	6	26	32	3,000	19,200	77,400	96,600
Welder	32	6	38	75	2,663	480	3,143
Brooder-Hover	6	---	6	324	2,106	---	2,106
Milking Machine	---	3	3	427	---	1,366	1,366
Lamb Brooder	---	3	3	300	---	960	960
Clothes Drier	3	---	3	720	2,304	---	2,304

2-Table II - Colorado 18 Gunnison - October 21, 1952

Appliance or Equipment	Percent of Consumers		Annual		Indicated Annual Kwh Usage		
	Using:	Planning:	Using and:	Kwh	Per 100 Farm Consumers		
	: To Use	: Planning	: Usage	: Per	Present	Future	Total
	1 :	: To Use	2/ :	Unit	Use	Use	Indicated
	(1) :	(2) :	(3) :	(4) :	(5) :	(6) :	(7)

OTHER LIGHTING:

Beef Cattle Barn	16	3	19	12	193	38	231
Poultry Brooder							
House	3	---	3	3	16	---	16
Milk House	3	---	3	35	112	---	112
Grain and Feed							
Stor. Bldg.	6	---	6	2	13	---	13
Garage	39	13	52	8	310	103	413
Shop	45	3	48	12	543	38	581
Bunk House	52	3	55	15	968	48	1,016
Other Buildings	19	3	22	12	233	38	271

OTHER HOUSEHOLD
USES:

Sewing Machine	23	---	23	10	258	---	258
Household Fan	16	---	16	15	242	---	242
Vacuum Cleaner	58	3	61	20	1,290	64	1,354
Heating Pad	42	3	45	3	126	10	136
Coal Stoker	19	---	19	240	4,656	---	4,656
Oil Furnace	6	---	6	300	1,950	---	1,950
Hot Plate	42	3	45	70	2,933	224	3,157
Percolator	32	3	35	60	2,130	192	2,322
Roaster	13	---	13	480	6,192	---	6,192
Toaster	87	3	90	35	3,840	112	3,952
Waffle Iron	77	---	77	25	2,258	---	2,258
Food Mixer	68	---	68	25	2,098	---	2,098
Dishwasher	3	3	6	30	96	96	192
Clock	61	3	64	18	1,625	58	1,683
Blanket	19	---	19	150	2,910	---	2,910

OTHER WATER
PUMPING

Livestock Watering	29	3	32	180	5,814	576	6,390
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3-Table II - Colorado 18 Gunnison - October 21, 1952

Appliance or Equipment	Percent of Consumers			Annual Kwh Usage Per Unit <u>2/</u>	Indicated Annual Kwh Usage		
	Using:	Planning:	Using and:		Per 100 Farm Consumers		
	To Use	Planning	To Use <u>1/</u>		Present	Future	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<u>OTHER FARM SHOP</u>							
<u>USES:</u>							
Air Compressor	10	3	13	35	340	112	452
Drill Press	55	10	65	12	696	116	812
Tool Grinder	74	10	84	25	2,095	243	2,338
Power Saw	13	3	16	12	193	38	231
Battery Charger	10	---	10	12	193	---	193
Lathe	3	---	3	12	38	---	38
Soldering Iron	26	---	26	15	387	---	387
<u>OTHER GENERAL</u>							
<u>PRODUCTIVE USES:</u>							
Feed Chopper	3	---	3	12	38	---	38
<u>OTHER POULTRY USES:</u>							
Water Warmer	3	---	3	60	192	---	192
<u>OTHER DAIRY USES:</u>							
Cream Separator	3	3	6	35	112	112	224
TOTAL ANNUAL KWH USAGE PER 100 FARM CONSUMERS					299,046	115,839	414,885
ANNUAL KWH USAGE PER CONSUMER					2,991	1,158	4,149
MONTHLY KWH USAGE PER CONSUMER					249	97	346

Source: Field appraisal completed in August 1952.

- 1/ Percent of all served farm consumers who were using or planning to use electrical appliances and equipment listed, within three years after the field appraisal as indicated by interviews with 31 respondents comprising a 20 percent random sample selected from tabular lists.
- 2/ Annual kwh average usage as determined by REA. Annual data used to account for seasonal variations.
- 3/ The total indicated annual kwh usage shown in this column does not necessarily equal column 4 times column 3. Some consumers have, or plan to have more than one of a particular appliance, or more than one of several different appliances.

TABLE III

PERCENT OF SERVED NONFARM AND TOWN RESIDENTIAL CONSUMERS USING AND PLANNING TO USE ELECTRICAL APPLIANCES AND EQUIPMENT AND INDICATED ANNUAL KWH USAGE PER 100 NONFARM AND TOWN RESIDENTIAL CONSUMERS WITHIN THREE YEARS AFTER THE DATE OF THE FIELD APPRAISAL

Appliance or Equipment	Percent of Consumers			Annual Kwh Usage Per Unit 2/	Indicated Annual Kwh Usage Per 100 Nonfarm & Town Resi. Consumers		
	Using:	Planning:	Using and:		Present	Future	Total
	: To Use	: Planning	: To Use 1/		: Use	: Use	: Indicated
	(1)	(2)	(3)	(4)	(5)	(6)	(7)

MAJOR USES:

House Lighting	98	2	100	300	30,000	480	30,480
General Barn Lighting	3	---	3	24	77	---	77
Poultry Laying House Lighting	---	3	3	35	---	112	112
Yard Lighting	5	---	5	18	86	---	86
Iron	94	---	94	100	9,510	---	9,510
Ironer	3	---	3	120	384	---	384
Radio	90	5	95	100	9,190	480	9,670
Refrigerator	73	8	81	360	26,100	2,916	29,016
Range	---	3	33	1,200	---	3,840	3,840
Washing Machine	89	---	89	35	3,105	---	3,105
Pres. System-Lift 22' or Less	8	5	13	180	1,458	864	2,322
Pres. System-Lift Over 22'	3	2	5	240	768	384	1,152
Space Heater (Supplementary)	3	2	5	70	224	112	336
Freezer (Cabinet)	18	6	24	900	15,930	5,760	21,690

2-Table III - Colorado 18 Gunnison - October 21, 1952

Appliance or Equipment	Annual : Indicated Annual Kwh Usage : Per						
	Using: Planning:	Using and:	Kwh	: 100 Nonfarm & Town Resi. Consumers			
	: To Use : Planning :	Usage :	Usage :	Present :	Future :	Total	
	: (1) :	: (2) :	: (3) :	: (4) :	: (5) :	: (6) :	: (7) :

MAJOR USES: (Cont'd)

Water Heater	2	5	7	3,000	4,800	14,400	19,200
Brooder-Hover	2	1	3	72	115	115	230
Clothes Drier	2	---	2	720	1,152	---	1,152

OTHER LIGHTING:

Poultry Brooder House							
House	---	2	2	5	---	8	8
Garage	13	5	18	8	103	39	142
Shop	3	---	3	12	38	---	38
Bunk House	6	---	6	15	96	---	96
Cave or Spring House	---	2	2	5	---	8	8
Other Buildings	3	---	3	12	38	---	38

OTHER HOUSEHOLD
USES:

Sewing Machine	32	2	34	10	322	16	338
Household Fan	3	---	3	15	48	---	48
Vacuum Cleaner	44	6	50	20	870	128	998
Heating Pad	24	5	29	3	73	14	87
Coal Stoker	2	---	2	240	384	---	384
Hot Plate	34	5	39	70	2,373	336	2,709
Percolator	44	3	47	60	2,610	192	2,802
Roaster	11	---	11	480	5,424	---	5,424
Toaster	76	1	77	35	2,709	56	2,765
Waffle Iron	45	5	50	25	1,128	120	1,248
Food Mixer	45	5	50	25	1,128	120	1,248
Dishwasher	1	2	3	30	48	48	96
Clock	45	5	50	18	812	146	958
Blanket	8	---	8	150	1,455	---	1,455

OTHER WATER PUMPING
USES:

Garden Watering	2	---	2	75	120	---	120
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3-Table III - Colorado 18 Gunnison - October 21, 1952

	Percent of Consumers			Annual : Kwh	: Indicated Annual Kwh Usage Per		
	Using:	Planning:	Using and:		: 100 Nonfarm & Town Resi. Consumers		
	: To Use	: Planning	: Usage	: Per	: Present	: Future	: Total
Appliance	:	: To Use 1/	: Unit 2/	:	: Use	:	: Indicated
or	:	:	:	:	:	:	: Future Use 3/
Equipment	(1)	(2)	(3)	(4)	(5)	(6)	(7)

OTHER FARM SHOP

USES:

Drill Press	6	3	9	12	77	38	115
Tool Grinder	6	---	6	25	160	---	160
Power Saw	6	---	6	12	77	---	77
Battery Charger	2	---	2	12	19	---	19
Lathe	3	---	3	12	38	---	38

OTHER DAIRY USES:

Cream Separator	1	2	3	35	56	56	112
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TOTAL ANNUAL KWH USAGE PER 100 NONFARM AND TOWN

RESIDENTIAL CONSUMERS	123,105	30,788	153,893
ANNUAL KWH USAGE PER CONSUMER	1,231	308	1,539
MONTHLY KWH USAGE PER CONSUMER	102	26	128

Source: Field appraisal completed in August 1952.

- 1/ Percent of all served nonfarm and town residential consumers who were using or planning to use electrical appliances and equipment listed, within three years after the field appraisal as indicated by interviews with 31 respondents comprising a 50 percent random sample of the nonfarm residential consumers and 31 town residential respondents comprising a 16.6 percent random sample, both selected from tabular lists.
- 2/ Annual kwh average usage as determined by REA. Annual data used to account for seasonal variations.
- 3/ The total indicated annual kwh usage shown in this column does not necessarily equal column 4 times column 3. Some consumers have, or plan to have more than one of a particular appliance, or more than one of several different appliances.

HISTORY OF AVERAGE MONTHLY KWH CONSUMPTION
AS SHOWN BY THE BILLING RECORDS

The billing records of the cooperative for the farm consumers interviewed in the survey indicated a generally rising average consumption since the date of energization in December 1941. These data are shown in the following table:

TABLE IV

AVERAGE MONTHLY KWH CONSUMPTION OF 28 FARM
CONSUMERS AS SHOWN BY THEIR BILLING RECORDS

Total Number Years With Electricity	Number of Schedules	Average Kwh Consumption Per Month									
		1942	1943	1944	1945	1946	1947	1948	1949	1950	1951
10	10	52	61	69	83	94	140	184	196	237	232
9	0	---	---	---	---	---	---	---	---	---	---
8	2	---	---	39	44	45	65	84	135	183	174
7	0	---	---	---	---	---	---	---	---	---	---
6	1	---	---	---	---	91	216	171	220	297	363
5	0	---	---	---	---	---	---	---	---	---	---
4	3	---	---	---	---	---	---	26	36	53	61
3	5	---	---	---	---	---	---	---	109	168	196
2	6	---	---	---	---	---	---	---	---	85	115
1	1	---	---	---	---	---	---	---	---	---	191

The historical consumption records of the system for the nonfarm and town residential consumers interviewed in the survey indicated a generally rising average consumption. Also, consumers added in recent years appear to have initial averages that are higher than those for consumers connected over the longer period. This is shown in the following table:

TABLE V

AVERAGE MONTHLY KWH CONSUMPTION OF 56 NONFARM AND TOWN
RESIDENTIAL CONSUMERS AS SHOWN BY THEIR BILLING RECORDS

Total Number Years With Electricity	Number of Schedules	Average Kwh Consumption Per Month									
		1942	1943	1944	1945	1946	1947	1948	1949	1950	1951
10	20	29	32	36	36	41	41	43	50	53	63
9	0	---	---	---	---	---	---	---	---	---	---
8	2	---	---	40	39	61	63	57	61	64	61
7	0	---	---	---	---	---	---	---	---	---	---
6	5	---	---	---	---	44	45	60	64	58	61
5	2	---	---	---	---	---	23	25	23	26	41
4	3	---	---	---	---	---	---	31	36	71	105
3	10	---	---	---	---	---	---	---	50	58	65
2	9	---	---	---	---	---	---	---	---	47	59
1	5	---	---	---	---	---	---	---	---	---	1066

ECONOMIC CHARACTERISTICS

Although the ultimate area to be served by this system extends into 7 counties, the majority of the consumers are located in Gunnison County. In order to provide the generalized background of economic information for this analysis, the 1945 and 1950 census data pertaining to Gunnison County was used. The total land in farms increased 15 percent while the number of farms decreased 20 percent. The average size of farm increased during this 5-year period from 921 to 1,324 acres. The average value of land and buildings increased 219 percent during this same period. In 1949, the sale of farm products averaged over \$13,000 per farm. On April 1, 1950, there were 5,716 persons in Gunnison County, a decrease of 8 percent for the 1940-1950 period. The town of Gunnison increased 593 persons, or 27 percent during the 1940-1950 period.

Two banks are located within the served area with a ratio of 1.73 to 1 of deposits to loans as of June 1952. The Montrose Production Credit Association serves this area. In 1951, this association loaned 630 farmers almost 5 million dollars. Livestock and livestock products accounted for 94 percent of all the income received from the sale of farm products. Several purebred Hereford cattle breeders are located in the served area. Beef cattle are shipped in from New Mexico and Texas for summer feeding and shipped out again in the fall. The cattle sold on the market go out as grass-fed, and the rest are wintered in the lower altitudes where the winters are not so severe. Ninety-four percent of the farms reporting indicate irrigation of 60,000 acres of meadow, hay and pasture lands throughout the summer season from the watersheds furnished by the forest lands.

Tenancy had dropped to 5 percent by 1950, and less than 18 percent of the farm operators had worked off the farm 100 days or more in 1949. Seventy-seven percent of the farms reported having electricity, and 78 percent telephone service as of April 1, 1950. Many of the farms had two to six cabins which are rented during the fishing and hunting season. This augments the farm income each year during the spring and fall.

Among the nonfarm and town residential consumers are approximately 150 families who were employed by the Colorado Fuel and Iron Corporation. This corporation was mining coal until recently when it closed down. Apparently it intends to stay closed as the Denver and Rio Grande Western Railroad has announced its intention of abandoning the narrow gauge railroad connecting this area with Salida and Pueblo. There is a possibility of a "Hard Rock" mill being constructed in the Crested Butte area near the Keystone Mine which would employ about the same number of people as the Colorado Fuel and Iron Corporation did prior to closing. Inquiries have been made of the manager of this system as to the possibility of furnishing electric power for this new project should it materialize.

PHYSICAL CHARACTERISTICS

The area is mountainous with altitudes varying from 7,683 feet at Gunnison to 11,312 feet at the summit of Monarch Pass. Much of the land is covered with heavy timber and is located inside the Gunnison National Forest. The most valuable asset of the forest is the watershed furnished for waters used for irrigation on the farms in the served area and for farms farther down in the valleys. Eleven towns depend entirely on forest streams for domestic water. The good farm lands are found along the various streams. Precipitation at Gunnison is slightly over 10 inches annually. The frost-free season is but 71 days; however, pasture and native hay have a longer actual growing season. The temperatures range from 105° to minus 47°. Sleet storms occur infrequently.

Both anthracite and bituminous coal are found in the area. There is an estimated untapped 100-million ton deposit rated as 65 percent coking coal in the area. Several minerals are known to exist here but have not been mined in any large volume. Ten million board feet of lumber are cut from the forests annually. Over 50,000 people visited the forest for hunting, fishing and other recreational purposes in 1950.

COMPETITIVE SOURCES OF ENERGY

Liquid petroleum gas competes with electricity at the present time. Fourteen percent of the consumers interviewed indicated they were planning on using LP gas in the future. Those consumers using LP gas are found among the larger ranch homes, while the nonfarm and town residential consumers are using very little. One-half of the use of LP gas is for cooking, one-fourth for heating water and the remainder for various purposes. Wood and coal are available in the served area. The homes using wood stoves for cooking have the benefit of heat for the kitchen from the stove. Many are heating water from coils located in the wood stoves in their kitchens. The following table shows the status of LP gas among the respondents interviewed.

TABLE VI

STATUS OF LP GAS USE, 93 RESPONDENTS
REPORTING IN RANDOM SAMPLE SURVEY

Consumers' Position With Respect to Use of Gas	Number of Respondents	Number of Appliances	Percent of Total
<u>Not Using</u>			
And not planning to use	78		84
But planning to use	1		1
<u>Using</u>			
But planning to change to electricity	2		2
But not planning to change to electricity	12		13
<u>Appliances Operated With Gas</u>			
<u>Presently being used</u>			
Ranges		13	50
Water Heaters		7	27
House Heating		3	11
Refrigerators		1	4
<u>Planning to Use</u>			
Water Heaters		1	4
House Heating		1	4

POWER PROBLEM

According to the appraiser, this system has an inadequate power supply during peak periods. The Bureau of Reclamation is presently building a line into Gunnison to furnish ample power to the cooperative as well as the town of Gunnison. As soon as this is completed and energized, better service should be available to the present consumers as well as making adequate power available to serve the potential consumers.

ANALYSIS OF FUTURE KWH CONSUMPTION

The indicated expected load to be attained within 3 years from the time of the appraisal for farm consumers will be achieved principally from increased use of water heaters, refrigerators and ranges. These items are of major importance on cattle ranches where they have large ranch homes and raise their own meat. Trips to town are usually few and far

between, especially during the winter months. On these trips to town, large food supplies are purchased. Storage of many of the food items in freezer cabinets and refrigerators makes for better living in the ranch homes. The addition of these items is not so noticeable among the nonfarm and town residential consumers since they have easier access to the local stores.

As revealed by the data obtained from the respondents interviewed, the consumers in this area are not using electrical energy at the average rate for the entire country as determined by REA for their appliances and equipment. The actual average consumption, taken from the billing records, is 73 percent of the indicated present consumption for farm consumers, and 66 percent for nonfarm and town residential consumers. Using the above percentages for each class of consumer, the following two tables show the indicated and estimated kwh usage for the various types of appliances and equipment expected to be attained within 3 years after the field appraisal.

TABLE VII

INDICATED AND ESTIMATED KWH USAGE FARM
CONSUMERS BY CHARACTER OF LOAD

Use	Percent Saturation	Indicated		Estimated
		Per 100 Consumers	Kwh Percent of Total	Annual Kwh Per 100 Farm Consumers
<u>Major Household Uses</u>				
Water Heaters	32	96,600	23.3	70,500
Freezer Cabinets	84	75,510	18.2	56,000
Refrigerators	123	44,100	10.6	32,000
Ranges	32	38,760	9.3	28,200
House Lighting	129	38,700	9.3	28,000
Pressure Systems	97	22,242	5.4	16,000
Radios	168	16,770	4.1	12,200
Irons	132	13,220	3.2	9,700
Livestock Watering	36	6,390	1.5	6,500
Roasters	13	6,192	1.5	4,500
Coal Stokers	19	4,656	1.1	3,400
<u>Other Uses</u>				
Miscellaneous	---	51,745	12.5	37,000
Total		414,885	100.0	304,000
Annual average estimated kwh for farm consumers 3 years after the field appraisal				3,040
Monthly average estimated kwh for farm consumers 3 years after the field appraisal				253

TABLE VIII

INDICATED AND ESTIMATED KWH USAGE, NONFARM AND
TOWN RESIDENTIAL CONSUMERS BY CHARACTER OF LOAD

Use	Indicated			Estimated
	Percent	Kwh		Annual Kwh
	Saturation	Per 100	Percent	Per 100
		Consumers	of Total	Consumers
<u>Major Household Uses</u>				
House Lighting	101.6	30,480	19.8	19,000
Refrigerators	80.6	29,016	18.9	18,000
Freezer Cabinets	24.1	21,690	14.1	13,000
Water Heaters	6.4	19,200	12.5	12,500
Radios	96.7	9,670	6.3	6,400
Irons	95.1	9,510	6.2	6,300
Roasters	11.3	5,424	3.5	3,600
Ranges	3.2	3,840	2.5	2,500
Washing Machines	88.7	3,105	2.0	2,000
<u>Other Uses</u>				
Miscellaneous	---	21,958	14.2	14,000
Total		153,893	100.0	97,300
Annual average estimated kwh for nonfarm and town residential consumers				
3 years after field appraisal				973
Monthly average estimated kwh for nonfarm and town residential consumers				
3 years after the field appraisal				81

Considering the expected adequacy of a power supply and the resultant improved outage control, the consumers should in 3 years' time gain more confidence in the use of electricity in the service area. The kwh usage locally as compared to the average throughout the country should improve. For the period from 3 to 10 years after the appraisal it is assumed the kwh usage for appliances and equipment will come nearer to meeting the average usage throughout the country.

In view of the available data and the foregoing analysis, it is certified the following average monthly estimates are reasonable and may be expected to be attained by the years specified:

Class of Consumer	Calendar	1954	1957	1962
	Year 1951			
Farm	198	250	320	420
Nonfarm residential	72	95	120	165
Town residential	58	75	100	140